

On Three new Species of Myrmeleonidae from Japan and Formosa (Neur. Planip.).

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On studying my collection of Myrmeleonidae, I have discovered a number of specimens from Japan and Formosa which seem to represent three new species, and so I propose to describe them in the present paper.

Acanthaclisis kawaii n. sp.

Fuscous with gray villosity. Face yellowish-white, palpi and base of antennae yellow; antennae short, stout and black; maxillary palpi yellow, slender and cylindrical; labial palpi nearly ochraceous, especially the last joint, and very long; vertex fuscous black with two elevations, separated by a middle impression, anteriorly with an ochraceous band.

Prothorax quadrangular with two transverse impressions, front margin about straight but slightly impressed in the middle, fuscous black with seven irregular grayish longitudinal lines above, under side whitish yellow; a small depression exists near the mesothorax; above clothed with black hairs, but underside with long, white ones. Mesosand metathorax also fuscous-black, with some reddish-yellow spots above, metathorax and the underside of both segments clothed with very long and silvery white hairs.

Abdomen deep grayish-black, hind margins of last four segments brown, the first one of them with a yellowish-brown spot on each posterior corner; underside yellow, basal half of segments mostly dark yellow, and a few basal segments clothed with long white hairs. In the female, the last segment short, split below, near the ventral margin with one long shining cylindrical appendage with black hairs; additional short segments with black hairs and spines, consist two plates.

Fore-leg black with very long white hairs; coxae and basal part of femora light ochraceous; femora mostly black; tibia black with some brownish spots and a long testaceous spur; claws testaceous. Middle-leg nearly as in the fore-leg, but the brownish spots of tibia are more yellowish and much larger. Hind-leg pale, with few hairs; coxae and femora light brown; the inner side of tibia black, but the outer side whitish.

Wings semi-vitreous, neuration yellow, strongly streaked and spotted with black. In the fore-wing the costal area is occupied by two regular rows of pentagonal cellules, those of the upper row slightly smaller than those of the lower; pterostigma milk-white, and not marked with any color.

Length of body, 40 mm.; fore-wing, 53 mm.; hind-wing, 47 mm.; antennae, 9 mm.

A single female specimen I owe to the kindness of my friend, Mr. S. Kawai. This specimen was captured by one of his friends at Banshoryo, Formosa, at the end of September last year.

This species is allied to Hagen's *A. japonica*, but it differs in many respects, especially in the color of the ventral side of the abdomen.

Formicaleo esakii n. sp.

Blackish. Face and palpi yellow, the last joint of labial palpi ochraceous. Antennae fuscous black, anterior margin of most of the joints narrowly yellowish, basal joint yellow with a narrow fuscous ring in the middle. Vertex black and swollen, with a few yellowish brown spots on the hind margin.

Prothorax longer than broad, little narrower in front, with a transverse impression anteriorly and broad concave space posteriorly; both anterior corners yellowish brown, and from this spot a narrow longitudinal line runs toward the hind margin; median brown line scarcely seen in front. Meso- and metathorax dull black; on the meso-thorax there is a yellow spot before the base of the fore-wing; lateral surfaces irregularly ochraceous.

Abdomen black; the third segment with two yellowish bands, one anterior and another along the posterior margin; the fourth and fifth segments with a yellowish band near the anterior margin; a large yellow spot exists on the sixth segment and also a small one near the posterior margin along both sides; anterior half of seventh segment yellow, posterior sides also yellow. A few of terminal segments are yellowish in ventral side. Genital parts are quite imperfect in my specimen; additional segments mostly yellow.

Fore-leg dark; outer side of coxae black, but inner side pale yellow; femora yellowish, outer side a little ochraceous and extremity black; tibia also yellowish with three broad black or ochraceous rings; spurs ochraceous, long and curved. Middle-leg yellowish; tibia with a longitudinal narrow blackish line and two broad, black rings. Hind-leg also yellowish; femora with many strong black spines, not hairs only; tibia with two broad black rings, one near the base and another in the extremity. Tarsal joints of all the legs yellowish except the last joint black in each leg; claws all testaceous and curved.

Wings elongated; hind-wing much shorter and more acute than fore-wing; vitreous with a fuscous spot near the termination of the cubital vein in the fore-wing. Neuration mostly black, interrupted with yellow or milky white; costal transversals mostly black, but pale near the base of the wings. Some small light fuscous spots, four of them in a row, exist near the apex of fore-wing as well as of hind-

wing very slightly; a very small, but deeply colored spot exists near the hind margin of hind wing. Pterostigma grayish white, marked with fuscous black.

Length of body, 33 mm.; fore-wing, 38 mm.; hind-wing, 36 mm.; antenna, 8 mm.

I received a male specimen from my friend, Mr. T. Esaki, who captured it on the night of August 24, 1911, when he was traveling through the northern part of the main island of Japan. He told me that the specimen had flown in at the window of the train by which he was traveling near the town of Taira, attracted by the light.

This species is allied to *Formicaleo contubernalis* McL., but, as stated above, its vertex is without spot, while that of *contubernalis* has numerous small orange-yellow spots; hind leg of the former with strong black spines, while that of the latter has long white hairs only; pterostigma of the former is distinctly marked with fuscous black, and the costal transverse veins mostly black, while those of the latter are indistinct and wholly pale. Moreover, the markings of the abdomen readily separate the two, because in the present species the second segment is without spot except that of the hind margin, and the third segment has one broad band in addition to that of the hind margin, while both the segments of *contubernalis* have a narrow interrupted dorsal orange-yellow line, and the sides of the third with the same colored spots.

With the above differences, I doubt not that, although allied, the two are distinct.

Myrmeleon ochraceopennis n. sp.

Face above the epistome blackish brown, shining; an obscure and irregular impressed spot in the middle between the antennae; mouth and a ring around eye yellowish, the latter often interrupted. Maxillary palpi thin, fulvous brown, the last joint cylindrical and notched on tip; labial palpi about two and a half times the length of the maxillary, fulvous brown, the last joint fusiform, and its conical tip notched. Antennae dull black, as long as the thorax; tip clavate and flattened, the very extremity little curved; a yellow ring exists around the two basal joints. Vertex blackish and transversely ovoid, elevated, and divided by a slight median impression; on top with irregular black spots; hind margin lighted with yellowish fuscous; in the male, the median impres-

sion is slighter than in the female; a yellowish fuscous line runs along the impression and unites with the similarly colored spot on the hind margin.

Prothorax dark ochraceous and short, little broader than long, little enlarged behind, and somewhat rounded before; two slight transverse impressions, one near the hind margin and another in the middle; on each side with some long and strong hairs. Meso- and metathorax dark ochraceous above, ventral side yellowish.

Abdomen slender, and shorter than wings, underside somewhat yellowish.

Legs slender, with black hairs; coxae and femora yellow, the latter thicker in the middle, slender portion more or less suffused with brown; tibiae and all tarsal joints black, shining; spurs as long as the basal tarsal joint, nearly straight and testaceous; claws testaceous.

Wings hyaline, suffused with light yellowish brown, inner margin strongly suffused with dark brown; a darkish narrow cloud exists between the radial and the 1st cubital veins; more deeply clouded below this; upper one is rather wide in the hind wing and much inclined to unite itself with the lower one; veins mostly pale, but the sub-costal, radial and cubital veins yellowish orange; pterostigma small, especially in the hind-wing, rounded and milk-white.

Length of body, ♂ 40 mm., ♀ 50 mm.; fore-wing, ♂ 50 mm., ♀ 57 mm.; hind-wing, ♂ 50 mm., ♀ 58 mm.; antennae, ♂ 12 mm., ♀ 10 mm.

A male and a female specimen captured by Mr. K. Asakura at Horisha, Formosa.

This splendid species is undoubtedly the largest of the genus *Myrmoleon* in Japan and also, of course, one of the largest of known species.

If the formation of new genera, *Baliga*, *Balaga* and *Enza*, which Navas proposes on the basis of the difference of neuration, be justified, this species may also perhaps represent a new genus, because such a difference between *Baliga asakurac* (Matsumura) and *Balaga micans* (McLachlan) is readily found among this and other species. But I am much inclined to think that the Navas classification may not be justified.

The species described from Japan by Okamoto in Wien. Entom. Zeit., xxix, 1910, and by the author in the present paper, taken together, number eighteen. In addition to these a species, *Enza otiosus*, which I ventured to transfer to the

genus *Myrmeleon*, had been described by Navas as from Japan in Rev. Rus. Ent., xii, 1912, so that the number of species of Japanese Myrmeleonidae, including Formosan ones, now amounts to 19, as follows:

1. *Dendroleon jezoensis* Matsumura. Hab.:—Hokkaido, Honto (Main Island of Japan).
 2. *D. japonicus* M'Lachlan.—Hab.:—Honto.
 3. *Creagris matsukae* Okamoto. Hab.:—Honto.
 4. *Acanthaclisis japonica* Hagen. Hab.:—Hokkaido, Honto.
 5. *A. kawaiii* Nakahara. Hab.:—Formosa.
 6. *Epacanthaclisis moikwasana* Matsumura. Hab.:—Hokkaido, Honto.
 7. *Formicalco nigricans* Okamoto. Hab.:—Honto.
 8. *F. contubernalis* M'Lachlan. Hab.:—Honto.
 9. *F. esakii* Nakahara. Hab.:—Honto.
 10. *F. acuminatus* Matsumura. Hab.:—Ogasawara, Riukiu.
 11. *F. formosanus* Okamoto. Hab.:—Formosa.
 12. *Myrmecalurus parvulus* Matsumura. Hab.:—Riukiu.
 13. *Glenuroides communis* Okamoto. Hab.:—Hokkaido, Honto, Kiushu.
 14. *G. okinawensis* Okamoto. Hab.:—Riukiu.
 15. *Myrmeleon asakurae* Matsumura. Hab.:—Formosa.
 16. *M. ochraceopennis* Nakahara. Hab.:—Formosa.
 17. *M. micans* M'Lachlan. Hab.:—Honto, Kiushu, Riukiu.
 18. *M. otiosus* Navas. Hab.:—"Japan."
 19. *M. formicarius* Linné. Hab.:—Hokkaido, Honto, Kiushu?, Riukiu; Europe, China, etc.
93. Komagome-Higashikatamachi, Hongoku, Tokyo, Japan.

A new Lycaenid from Kamerun, West Africa (Lep.).

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In a lot of material recently received from Dr. H. L. Weber, of Efulen, Kamerun, I have been pleased to detect what I believe to be a hitherto unrecognized genus of the family Lycaenidae. It is represented by a pair, the female taken at Efulen, the male at Lolodorf, about forty miles distant from the former place. The markings of the under side of the wings strikingly resemble those of certain species of the South American genus *Euptychia*, belonging to the family Satyridae, and I have accordingly coined the name *Satyrimima*